Emission Benefits Methodology

Emission benefits from Solid Fuel Burning Appliance (SFBA) Program were calculated using data sources, methods and assumptions consistent with the Fairbanks Serious Area $PM_{2.5}$ SIP, which is currently under development.

The first step consisted of assembling projected baseline $PM_{2.5}$ emissions for the space heating sector by individual Source Classification Code (SCC) category. Table 1 presents these baseline emissions by SCC for the Fairbanks $PM_{2.5}$ nonattainment area. Direct $PM_{2.5}$ emissions are projected to 2024 (the Serious SIP horizon year) and are presented on an average winter episodic daily basis.

Table 1
Projected Baseline PM2.5 Space Heating Emissions (tons/episode day)

SCC	Category Name	$PM_{2.5}$ Emissions
2104008100	Fireplaces	0.7474
2104008210	Conventional (non-certified) Fireplace Inserts	0.0579
2104008220	EPA-Certified Non-Catalytic Fireplace Inserts	0.0478
2104008230	EPA-Certified Catalytic Fireplace Inserts	0.0312
2104008310	Conventional (non-certified) Woodstoves	0.4660
2104008320	EPA-Certified Non-Catalytic Woodstoves	0.6403
2104008330	EPA-Certified Catalytic Woodstoves	0.4278
2104008410	Exempt Pellet Stoves	0.0158
2104008420	EPA-Certified Pellet Stoves	0.0532
2104008610	Outdoor Wood Boilers (Hydronic Heaters)	0.2625
2104004000	Residential Heating Oil, Central Oil Furnace	0.0527
2103004001	Commercial Heating Oil Furnace	0.0180
2104004000	Portable/Kerosene Heaters	0.0003
2104007000	Direct Vent Oil Heaters	0.0012
2104006010	Residential Natural Gas	0.0009
2103006000	Commercial Natural Gas	0.0096
2104002000	Residential Coal Heaters	0.0961
2103002000	Commercial Coal Heaters	0.0003
2103008000	Commercial Wood Heaters	0.0003
2102012000	Waste Oil Burners	0.0024
TOTALS		**2.9317**

Emission reduction calculations were estimated using data from the same sources and subtracted from the initial emissions to determine the net emission reductions of the program through July 2018, which was estimated at 0.43 tons/day of PM2.5 emissions. Key elements of this methodology include assumptions that solid fuel burning appliances operate at steady state equal to the certification value, and do not account for operator error.